



Improved Iterative Back Projection for video super-resolution

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Mots-clés	Image Registration [3], Iterative Back Projection [4], Super resolution [5]
Résumé en anglais	<p>In this paper, Iterative Back Projection (IBP) technique is improved by using bicubic resampling. The improvement in the performance is achieved by adding bicubic interpolation followed by bicubic decimation in each iteration of IBP. Firstly the four low resolution frames are considered as observed frames. The size of the reference frame is increased by interpolation to generate the initial guess frame. Then the size of interpolated frame is increased and decreased respectively by using bicubic interpolation and decimation processes. This operation generates a lower bandwidth in the frequency domain, smoothing the impulsive errors in the respective consecutive frames reducing the mean square error in each iteration. The proposed method has been tested on Akiyo, Carphone, Mother & Daughter, and Miss-America video sequences. The quantitative peak signal-to-noise ratio (PSNR) and structural similarity index (SSIM) results as well as the visual results show the improvement obtained by the proposed technique on the standard IBP.</p>
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